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Purchasing Feeder Cattle, Calves, Sheep and Lambs

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Contents

Purchasing Feeder Cattle, Calves, Sheep and Lambs

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Introduction

Little information is available concerning the feeder livestock business in Ohio, except that large numbers are purchased by farmers and agencies in Ohio for feeding and grazing purposes. During the past 20 years the methods of marketing feeder livestock have undergone many changes. One significant change was the shift away from selling feeder sheep through terminal markets to selling them direct from ranges and farms to feed lots and pastures.

To analyze the problems confronted by the individual farmer feeding livestock, Ohio, eight Corn Belt states, and the Bureau of Agricultural Economics, U. S. D. A., agreed to participate in a regional study.

In 1948, 2,554,171 head of cattle and calves, and 2,324,631 head of sheep and lambs moved into the eight Corn Belt states from other states for purposes other than immediate slaughter. Most of them went for feeding and grazing. In feeder cattle receipts during the past five years, the relative position of the Corn Belt states has remained practically unchanged. Ohio ranked sixth in each year from 1943 to 1948 in total Corn Belt receipts, receiving 4.2 percent based on the five year average, 1943 to 1947, and 3.8 percent in 1948. In feeder sheep receipts, Ohio ranked fifth in 1943 and seventh from 1944 to 1947. Based on the five year average (1943-1947) Ohio accounted for 2.9 percent of the total Corn Belt receipts of feeder sheep. In 1948 Ohio moved to sixth place, receiving 4.5 percent of the total receipts. In addition, significant numbers of cattle and sheep were moved from one area to another within a given state. Before going too far, it is necessary to stop and define just what is meant by the term, feeder livestock in this study.

Feeder cattle and calves: Any animal that finds its way into a feed lot or pasture for finishing is considered as a feeder. In this study, this does not include worn out dairy cows, cull dairy heifers or bulls.

Feeder sheep or lambs: Those animals that go into feed lots or pastures for finishing.

Hereafter, when using the term "feeder cattle" it refers to both feeder cattle and calves, and when using the term "feeder sheep" it refers to feeder sheep or lambs.

The data for this study were obtained from the Ohio Bureau of Animal Industry in Columbus and Cincinnati, Ohio, from a representative sample of Ohio feeder farmers, and from actual case studies of livestock transported from the state of Montana.

All states have laws requiring that livestock brought in from other states, for purposes other than immediate slaughter, be accompanied by health certificates, or that they enter on permits issued by the State Veterinarian in the states to which the shipments go. If shipments come from public stockyards, the certificates are issued by the Bureau of Animal Industry; if direct, by inspectors authorized by the State Veterinarian in the states where the shipments originate. Copies of such certificates and of permits are on file in the office of the State Veterinarian in the receiving state.

It was known that some livestock entered Ohio in ways that were contrary to regulations; to the extent that unreported livestock were shipped into Ohio, the numbers were unknown.

Purpose and Method of Study

Recognizing that many problems confronted the farmers in Ohio who bought feeder livestock, the Department of Agricultural Economics and Rural Sociology of the Ohio Agricultural Experiment Station conducted an area sample of Ohio farmers in the fall of 1947 and the spring of 1948. An investigator visited 373 farms, interviewed the owner or manager, and obtained information concerning feeder livestock.

The actual selection of the farms was performed by the Iowa Agricultural Statistical Laboratory at Iowa State College, Ames, Iowa. It was indicated to the Iowa laboratory the counties in Ohio within which there were light and heavy cattle and sheep feeding. Sixteen counties were indicated as light feeding counties, and 37 counties were indicated as heavy feeding counties. As the areas or segments were selected it was decided that if the dwelling of the operator fell within the sample segment it was considered as a sample farm, regardless of whether all or only part of the farm was inside the segment. In some cases where a segment did not contain any feeder farmers, an alternate area adjacent to the master sample segment was chosen. From the farmers interviewed in the master sample segment, the names of any feeders in the alternate area were obtained. These feeders and any other feeders in the general vicinity were interviewed. The number of farms in a sample segment

varied from one to four farms. The 1945 census of livestock on farms was used as the basis for determining the number of sample farms per county. To locate these farms, large scale county maps showing farm dwellings and detailed road networks were used. Of the 373 farms visited, there were a total of 73 farms buying or selling feeder livestock in 1947.

Although this sample may not be typical of all feeder farmers, it was thought that it represented a good cross section of the farmers who handled feeder livestock.

Feeder Livestock Shipped Into Ohio

Number of Head

The volume of feeder cattle shipped into Ohio in recent years has varied considerably. Feeder cattle receipts declined almost 33 percent from 1946 to 1947; the 1948 receipts were 12.1 percent lower than in 1947, but in 1949 they gained 26.4 percent from the 1948 receipts as shown in Table 1. The large decline in 1947 was due to a marked decline in the livestock arriving direct from ranchers. In 1948, all of the decrease was in feeder cattle coming from terminal markets as the number arriving direct made a rapid comeback.

TABLE 1. Feeder Cattle Shipped Into Ohio for the Years 1938-1949

Year	Number	Year	Number
1938	133,891	1944	87,323
1939	148,396	1945	105,107
1940	126,141	1946	130,964
1941	85,906	1947	87,811
1942	109,524	1948	77,157
1943	120,667	1949	97,550

Probably the largest single factor to account for the decline was the shortage of feed on Ohio farms in 1947 and the continuing effect of this factor through the first nine months in 1948. Many farmers, who in previous years had purchased feeder livestock, failed to do so in 1947 because bad weather had reduced their crop yields considerably. Another factor influencing the decline, especially in sheep, has been the tendency of farmers who formerly fed sheep to shift from sheep to feeder cattle. This could be due to many reasons, namely, many farmers believed that the future demand for cattle would be greater than for sheep; many farmers believed that the prices for cattle were generally more favorable than for sheep, especially in 1947 and 1948.

Table 2 shows there also has been wide fluctuations in feeder sheep shipped into Ohio. This might indicate that imports depend largely upon the amount of feed available and also the prospects of a profitable or unprofitable margin. As 1948 was a record crop year, it was logical to expect an increase in feeder livestock numbers.

In the inflationary period, 1947 and 1948, many farmers became more cautious in their buying of feeder livestock, anticipating a downward trend in the entire general price level. Many farmers reduced their feeding operations until deflationary forces set in, by merely selling their crops for cash, rather than converting them into livestock products.

TABLE 2. Feeder Sheep Shipped Into Ohio for the Years 1938-1949

Year	Number	Year	Number
1938	292,217	1944	83,904
1939	263,066	1945	102,535
1940	312,094	1946	108,877
1941	218,681	1947	48,217
1942	217,314	1948	43,520
1943	174,459	1949	104,428

Seasonality of Feeder Livestock Purchases

In the past few years cattle and sheep moved into Ohio in largest numbers during the late summer and fall months as shown in Tables 3 and 4. The heaviest movement of sheep was during the months of July, August, September, and October. Feeder cattle began to move in increasing numbers early in September, with the peak usually occurring in the month of October.

The movement of feeder sheep was more seasonal than feeder cattle in recent years. In the months of September and October, based on the 1944-1948 average, 34.1 percent of the total feeder cattle entered Ohio. In 1949, these two months accounted for 44.9 percent of the total head purchased. The same corresponding two months, based on the 1944-1948 average for feeder sheep, accounted for 55.1 percent of the total feeder sheep purchased. In 1949, for the same two months, 54.2 percent of the total feeder sheep were received. It is interesting to note that in both feeder cattle and sheep there was a sharp increase in the number shipped in during the two months.

During the cold winter months the number arriving declined considerably. The lack of facilities and feed supplies in the range areas contributed largely to the decline. Most farmers preferred to receive their feeders early in the fall, to be fed out over the winter months, and be ready for market in the spring. Due to the shortage of feed on Ohio

TABLE 3. Imports of Feeder Cattle Into Ohio by Months, 1944-1949 with the 5-Year Average 1944-1948

Month	1944	1945	1946	1947	1948	5-year average	5-year average expressed as percent	1949	1949 percent of total
January	3,752	1,645	1,874	3,107	888	2,253	2.37	3,353	3.44
February	2,953	1,510	3,636	2,559	760	2,284	2.40	2,959	3.03
March	4,753	4,337	5,679	5,331	1,447	4,309	4.53	4,863	4.99
April	12,872	12,740	11,931	5,176	4,017	9,347	9.82	3,920	4.02
May	7,150	8,921	7,827	4,525	8,382	7,361	7.73	2,423	2.48
June	6,481	10,082	15,440	7,935	7,953	9,578	10.06	4,711	4.83
July	2,719	8,372	11,601	5,729	4,565	4,509	4.74	3,952	4.05
August	6,735	13,332	13,347	5,790	6,821	9,605	10.09	11,445	11.73
September	9,546	9,293	10,580	15,926	10,140	11,097	11.66	20,210	20.72
October	19,072	22,321	28,593	21,096	15,798	21,376	22.44	23,547	24.14
November	7,777	9,563	15,946	7,826	10,828	9,601	10.09	12,636	12.95
December	3,513	2,991	4,508	2,585	5,558	3,831	4.02	3,531	3.62
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Total	87,323	105,107	130,964	87,811	77,157	95,196	100.00	97,550	100.00

TABLE 4. Imports of Feeder Sheep Into Ohio by Months, 1944-1949 with the 5-Year Average 1944-1948

Month	1944	1945	1946	1947	1948	5-year average	5-year average expressed as percent	1949	1949 percent of total
January	5,447	1,656	1,155	2,906		2,233	2.88	2,794	2.74
February	2,295	54	2,483	4,560		1,878	2.43	3,307	3.24
March	3,403	3	1,680	1,636	4,246	2,194	2.83	426	0.42
April	2,820	1,281	929	217	909	1,231	1.59	793	0.78
May	4,097	1,535	1,764	2,138	4,679	2,843	3.67	3,251	3.19
June	2,375	2,400	5,741	2,699	5,591	3,761	4.86	5,068	4.97
July	520	1,116	6,335	11,630	3,288	4,578	5.91	11,547	11.32
August	4,310	14,255	10,448	5,102	2,364	7,296	9.43	13,180	12,91
September	7,824	20,789	39,105	937	11,613	16,054	20.74	37,407	36.66
October	35,232	45,975	34,068	11,918	5,744	26,587	34.35	17,892	17.54
November	12,284	9,099	2,806	4,028	2,129	6,069	7.84	6,287	6.16
December	3,297	4,372	2,363	446	2,957	2,687	3.47	76	0.07
Total	83,904	102,535	108,877	48,127	43,520	77,411	100.00	102,028*	100.00

*This figure is short 2400 sheep which are unaccounted for monthly, (Table 6.)

farms in 1947, many farmers could not get their feeders fattened properly, and were forced to buy high priced feed or finish them on pasture in the spring months. This process was discouraging to most farmers, because of the slow turnover of capital invested, and the feeders lacked the desired quality of finish when marketed.

Channels of Distribution

Terminal markets play the leading role in shipments of feeder cattle into Ohio, while the majority of the feeder sheep are purchased direct from ranchers in various states. Tables 5 and 6 show the number of feeder cattle and sheep shipped into Ohio from terminal markets and direct from ranchers since 1944.

TABLE 5. Feeder Cattle Shipped into Ohio from Terminal Markets and Direct from Ranchers for the Years 1944-1949

Year	From Terminal Markets	Direct from Ranchers	Total
1944	82,395	4,928	87,323
1945	90,681	14,426	105,107
1946	114,902	16,062	130,964
1947	78,378	9,433	87,811
1948	63,891	13,266	77,157
1949	83,370	14,180	97,550

TABLE 6. Feeder Sheep Shipped into Ohio from Terminal Markets and Direct from Ranchers for the Years 1944-1949

Year	From Terminal Markets	Direct from Ranchers	Total
1944	1,457	82,447	83,904
1945	3,012	99,523	102,535
1946	1,943	106,934	108,877
1947	7,374	40,843	48,217
1948	11,175	32,345	43,520
1949	27,067	77,361	104,428

Analysis of the data revealed that 70 to 80 percent of the feeder cattle came from seven terminal markets. The majority of these markets are located on almost a direct line running north and south in the United States from North Dakota to Texas. Kansas City, Missouri is and has been the leader in terminal market shipments of feeder cattle to Ohio, accounting for at least one-fifth of the cattle every year.

That Kansas City is the most important terminal market for feeder cattle shipments to Ohio might be due to many factors. Kansas City has long been famous as a good cattle market. In addition, it is located in the center of all the terminal markets and is in an advantageous position to receive cattle from any state.

On the other hand, the terminal market plays a secondary role in feeder sheep shipments, as the majority of them are purchased direct from ranchers in various states. Over 95 percent of the feeder sheep purchased from terminal markets came from five markets. Ft. Worth, Texas, South St. Paul, Minnesota, and Omaha, Nebraska are the three leading terminal markets for feeder sheep, but their position from year to year has varied.

Kansas City, South St. Paul and Chicago are important terminal markets for both feeder cattle and feeder sheep. Although their relative position has changed in some years, they still remain in the upper bracket. Even though the total number of head of feeder livestock has varied from year to year, the increase or decrease has been relatively consistent throughout the terminal markets.

The farmer sample revealed also that some farmers preferred to buy their feeders from auction markets and dealers, rather than from terminal markets or direct from ranchers. The choice as to where to buy depends considerably on the contacts of the farmer and his familiarity with the livestock markets.

In the discussion of feeder livestock purchased direct from ranchers in various states, one must remember that direct purchases were of much greater importance for feeder sheep than for feeder cattle.

Although purchases of feeder cattle direct from ranchers came from a wide range of states, the majority were centered in the Western and Southwestern sections of the United States and included Texas, New Mexico, Nebraska and Oklahoma. Both Nebraska and Texas are noted for their beef cattle and these two states have some of the best rangeland for the production of beef cattle.

The leading states from which direct purchases of feeder sheep were made were Texas, Wyoming, Montana, and Nebraska. In the early and middle forties, Kansas furnished from 20 to 30 percent of the feeder sheep for direct purchase, but since 1945 the figure has been reduced to less than 3 percent.

Centers of Distribution of Feeder Livestock in Ohio

Feeder Cattle

The data revealed that Ohio has definite feeder areas that receive the majority of the feeder livestock shipped into the state. There are six principal cattle feeding areas, comprising 52 counties as shown in Figure 1. These areas accounted for 94 percent of the feeder cattle

shipped into Ohio during the 1948 and 1949 seasons. Area A, in the Northwestern section of the state, consisting of eight counties and centering around Wood County, received 29.2 percent, over 48,000 head, of the total feeder cattle purchased during these two seasons.

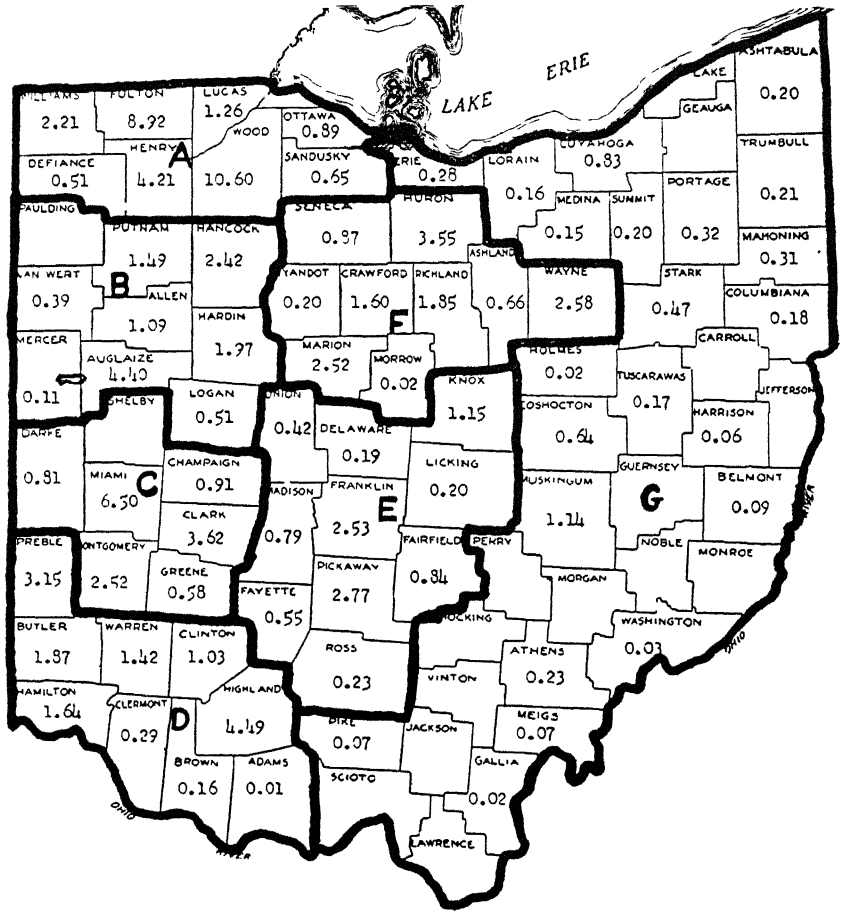

Fig. 1 Percentage distribution of feeder cattle received by counties and areas, based on 1948-1949 two-year average of 82,937 head.

Area	Percent
A-Northwest	29.25— 8 counties
B-West Central	12.38— 9 counties
C-Dayton, Springfield, and Piqua	14.94— 7 counties
D-Southwestern	14.06— 9 counties
E-Central	9.67—10 counties
F-North Central	13.85— 9 counties
G-Balance of State	5.85—36 counties

The second distribution area of importance (Area C) centers around Miami County and is called the Dayton, Springfield, Piqua Area. Seven counties in this area, led by Miami County and followed by Clark, Montgomery and Champaign, received 14.9 percent of the state total for 1948 and 1949.

The third important area of distribution (Area D) is located in the Southwestern part of the state. This area includes nine counties led by Highland, Preble, Butler, and Hamilton counties. These nine counties received 14.1 percent of the total feeder cattle imported into Ohio during 1948 and 1949.

A fourth distribution area (Area B) consisting of nine counties in the West Central part of the state received 12.4 percent of the total feeder cattle for the past two years. This area was led by Auglaize County, and followed by Hancock, Hardin, and Putnam Counties.

The fifth important distribution area (Area F) is located in North Central Ohio. This area, led by Huron, Marion, and Wayne Counties, received 13.9 percent of the total feeder cattle in 1948 and 1949.

The sixth area (Area E) includes ten counties located in Central Ohio. This area, led by Pickaway and Franklin Counties, received 9.7 percent of the state total.

The balance of the state (Area G), which is the Northeastern, Eastern, and Southeastern part of the state, received only scattered shipments of feeder cattle accounting only for about 5 percent of the total feeder cattle shipped into Ohio during 1948 and 1949.

It was impossible to follow the feeders to the ultimate destination of the farmer purchasers because records were available only to identify the original purchases by markets. Likewise, it was impossible to follow the movement of native feeder cattle in Ohio. No records were available.

This area analysis revealed there are definite feeder areas in Ohio, and that ample opportunities exist for considerable expansion in many Eastern and Southeastern counties to engage in raising feeder livestock for the other areas of the state.

Feeder Sheep

There are five principal lamb feeding areas in Ohio, comprising 43 counties. These areas (Fig. 2) accounted for 92 percent of the feeder lambs shipped into Ohio during 1948 and 1949. Heaviest centers of distribution the past two years were in markets located in Franklin, Marion, Fulton, Hardin, and Clark Counties. These five centers, each located in a different area, brought in 46 percent of the feeder lambs in the state.

The area made up of 10 counties in Central Ohio (Area E) with Columbus as the hub brought in 23.7 percent of the feeder lambs during the past two years. The second most important area (Area C) comprising seven counties near Springfield, Urbana, Xenia, and Greenville, accounted for 19.7 percent of the shipped in feeder lambs. A third

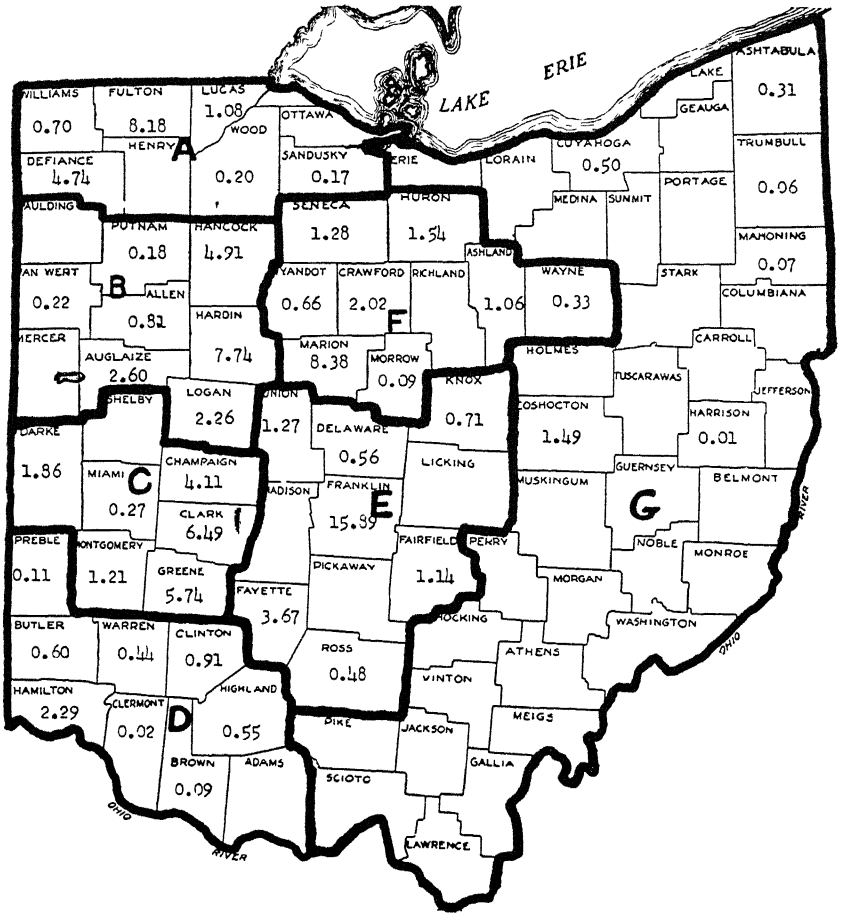

Fig. 2 Percentage distribution of feeder sheep received by counties and areas, based on 1948-1949 two-year average of 73,740 head.

Area	Percent
A-Northwest	15.07— 8 counties
B-West Central	18.72— 9 counties
C-Dayton, Springfield, and Piqua	19.68— 7 counties
D-Southwestern	5.01— 9 counties
E-Central	23.72—10 counties
F-North Central	15.36— 9 counties
G-Balance of State	2.44—36 counties

area, (Area B) almost as important, is in West Central Ohio and is comprised of nine counties; this area brought in 18.7 percent of the feeders. A fourth area of distribution (Area A) accounted for 15.1 percent of the feeders. It is comprised of eight counties. Nine North Central counties (Area F) accounted for 15.3 percent of the total. Southwestern Ohio, and the balance of the state (Area G) accounted for less than 8 percent of the total feeder sheep received.

Factors Considered by Ohio Farmers in the Purchase of Feeder Livestock

For the purpose of clarification the data were divided into three classifications:

Feeder Cattle	Feeder Sheep	
1- 5 head	1-100 head	—Small feeder
6-25 head	101-300 head	—Average feeder
26 head and over	301 head and over	—Large feeder

Origin of Purchases

Analysis of the farmer sample[1] revealed that farmers purchased their feeder cattle from three sections of the country in 1947. The data showed there was little preference existing between Northwestern or Western United States, and the Southwestern ranges for all groups of cattle feeders. The Southwestern ranges furnished 43.0 percent of the total feeder cattle purchased by the farmers in the sample. This was closely followed by the Northwestern or Western ranges with 41.3 percent coming from this section. Only 15.8 percent of the feeder cattle purchased were native of Ohio. Included in this 15.8 percent were feeder cattle bought from Kentucky and West Virginia. There was a tendency for the small and average cattle feeders to purchase a greater percentage of their cattle from local Ohio sources which includes the native feeders, while the carlot cattle feeder made over 90 percent of his purchases from the Northwestern or Southwestern ranges.

In general, the feeder sheep purchased followed the same sectional pattern as feeder cattle. The data showed a slight preference for feeder sheep purchased from the Southwestern ranges. These ranges furnished 42.4 percent of the total feeder sheep purchased by Ohio farmers in the sample. This section was followed by the Northwestern or Western ranges with 30.8 percent, while 26.8 percent of the total feeder sheep purchased were native of Ohio.

[1]See description of the farm sample under Purpose and Method of Study, page 4.

Another interesting aspect was the size of lot in which the feeder livestock were purchased from the various regions. Of the total feeder cattle purchased in carload lots, 46.2 percent came from the Northwestern or Western ranges. In contrast, only 9.7 percent of the carload lot purchases came from local farmers. In general, it can be said that the purchases of feeder cattle by the average and the large cattle feeders showed no preference as to the section of the country, because the Northwestern or Western ranges were close to the Southwestern ranges in size of lots purchased. The small cattle feeder purchased the majority of his feeders from local sources.

In feeder sheep purchases, 53.4 percent of the total purchases by the average sheep feeder, ranging from 101 to 300 head, came from the Southwestern ranges, while 46.6 percent came from the Northwestern or Western ranges. Most of the sheep feeders preferred to purchase lambs in carload lots. In this study, no large sheep feeders, handling over 300 head, were sampled.

In terms of carload lots, there was a tendency to purchase lighter weight cattle in the Northwestern or Western ranges than in the other sections. Of the total purchases coming from this area, 60.9 percent average from 400 to 800 pounds, while 62.4 percent of the cattle purchased from the Southwestern ranges averaged from 600 to 1000 pounds in weight. The majority of the local purchases of feeder cattle weighed from 800 to 1000 pounds.

All of the feeder lambs purchased from the Northwestern or Western ranges weighed 70 pounds or more, while the lambs coming from the Southwestern ranges averaged from 50 to 70 pounds or more. All of the lambs purchased in carload lots weighed 70 pounds or more. The majority of the local purchases of lambs varied in weight from less than 50 pounds to over 70 pounds.

Seasonality of Purchases

Analysis of the data in the sample revealed that of the 59 lots of feeder cattle purchased, 47.4 percent were by the large cattle feeder in carload lots, 45.8 percent by the average cattle feeder, and 6.8 percent by the small cattle feeder. The purchases by the small cattle feeder showed little seasonal pattern as they were scattered throughout the year. The average and the large cattle feeders definitely preferred to buy in the fall months. Seventy-five percent of the lots purchased by the large cattle feeder were in the fall months beginning with September and including December, while 52 percent of the lots purchased by the average cattle feeder were in this same period.

The data indicated that farmers in Ohio bought their feeder cattle in quantities approaching carload lots. In interviews with these farmers, many of them indicated their willingness to buy in carload quantities in order to take advantage of lower rates, but they were not always able to do so because of other variables, such as not having enough capital to buy a full carload, not having enough feed available, etc.

With the exception of one lot reported, all feeder sheep were purchased in the fall months. In the sample, over 70 percent of the lots purchased were from one to 100 head, and there were no lots purchased with over 300 head.

Types of Markets

The small cattle feeder made 72.7 percent of his purchases from local sources with a few head coming from auction markets. The average cattle feeder made his purchases from many types of markets, including terminal markets, auctions, concentration yards, local sources, and a few head direct from ranchers. Auction markets supplied the average cattle feeder with 42.5 percent of his purchases.

The large cattle feeder made 34.1 percent of his purchases directly from ranchers and 28.1 percent from terminal markets. Over three-fourths of the purchases by the carload cattle feeder from terminal markets and direct from ranchers were made in the fall months, September to December. These two types of markets were the only markets showing any definite seasonal trend in purchases.

The small sheep feeder purchased his sheep from two main sources, namely, auctions and local farmers, while the average sheep feeder purchased his sheep from local sources and direct from ranchers. This information was not available for the large sheep feeder as none were represented in the sample.

Sexes and Classes

There was a definite tendency on the part of all groups of cattle feeders to purchase steers rather than heifers, cows, or bulls. Heifers constituted the next most important class of cattle, followed closely by calves. All of the cows were purchased by the large cattle feeder, and all of the feeder bulls were purchased by the average cattle feeder.

As a whole, relatively few cattle over two years old were purchased, probably the fact that most killers prefer lighter weight cattle from the feed lot was responsible for the purchase of younger animals. In addition, the quality of the younger animal was considered better than the older one. However, prices, feed costs, and margins influence farmers to change from one sex class to another.

Feeder sheep purchases included lambs and ewes, but no wethers or bucks. Nearly 94.0 percent of the total sheep purchased were lambs; the remainder were ewes. The purchases of the average sheep feeder were all lambs, while the small sheep feeder purchased 82.2 percent lambs and 17.8 percent ewes.

Weights

The Ohio feeder farmer preferred to buy feeder cattle ranging in weight from 400 to 800 pounds. The data indicated that 35.2 percent of the total head purchased were within the weight limits of 600 to 800 pounds. This group was closely followed by the 400 to 600 weight group with 32.4 percent of the total falling in this class. The demand for lighter and heavier feeders was relatively small with 19.8 percent of the total purchases in the 800 to 1000 pound class, and 12.5 percent weighing less than 400 pounds. Over 80 percent of the purchases of light animals (under 400 pounds) were made by the large cattle feeders. It can be concluded that the small and the average cattle feeders preferred to buy cattle weighing from 400 to 600 pounds, while a majority of the heavier cattle were purchased by the large cattle feeders.

The small sheep feeder preferred to buy lambs weighing from 50 to 70 pounds, while the average sheep feeder preferred heavier animals of 70 pounds and over.

By Weight and by the Head[1]

Over 90 percent of the total cattle purchased by all groups of feeders were by weight rather than by the head. The average cattle feeder (6-25 head) bought some cattle by the head. The small cattle feeder purchased all of his cattle by weight, while 98.1 percent of the purchases by the large feeder were by weight. In conclusion, it can be stated that practically all feeder cattle are bought by weight, and if any are bought by the head, they will probably be purchased by the average or medium sized cattle feeder.

Nearly 80 percent of the feeder sheep purchased by all feeders were bought by weight rather than by the head. On the basis of the feeder classification, the small sheep feeder bought 61 precent of his purchases by the head, while the average sheep feeder purchasd all animals by weight.

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[1]"By the head" is a term commonly used with reference to cows or ewes for breeding purposes, but in the above section it refers to the feeder cattle or feeder sheep purchased by the head.

Means of Transportation from the Origin of Purchase

Further analysis of the data indicated that 63.2 percent of the total cattle purchased by all groups of feeders were transported from the point of purchase (markets, railroad, receiving points) to the farm in the feeder's own truck. The next important means of transportation was that of hired truckers which took care of 33.2 percent of the total head purchased, while the trucks of sellers accounted for less than 4.0 percent of the total purchases. The small and the large cattle feeder transported the majority of their purchases in their own trucks, while about one-half of the purchases by the average feeder were in his own truck, and one-half by hired truckers. The small cattle feeder did not use the trucks of sellers for transporting any of his purchases.

All of the purchases by the average sheep feeder were transported to the feeder's farm in his own truck. The small sheep feeder utilized hired truckers to transport 56.7 percent of his purchases.

Breeds

Heretofore, nothing has been mentioned as to the breed of cattle favored by the farmers included in the sample. There was a marked preference for Herefords by the farmers in the sample, probably because large numbers of this breed are available. Many of them stated they liked the finish of the Herefords, and that feeding Herefords had long been a family tradition and they were continuing this practice. There was little difference in breed preference by type of feeder.

All of the feeder sheep purchased were of white face and there was no other type found in the sample.

Reasons for Purchasing at Certain Times

Further analysis of the farmer sample revealed the factors which influenced farmers to purchase feeder livestock at certain times. The following reasons were given:

Reasons given	Feeder Farmers Per cent
Had feed and pasture available	21.6
Like to buy feeders in fall months	17.7
Buys at the same time every year	9.8
Wanted to try some feeders	7.8
Likes to feed out over winter months	7.8
Had sold others and wanted to buy more	3.9
Likes to buy feeders in spring months	3.9
Saw the feeders and liked their looks	3.9
Good for cleaning up stock fields	2.0
Just wanted a few head of feeders around	2.0
Low price	2.0
No reasons given	17.6

Over 50 replies were given to this question, and the factor which received the greatest number of replies was the one where 21.6 percent of the farmers stated they had feed and pasture available at the time of purchase. Running a close second was the reply that 17.7 percent of the farmers liked to buy feeders in the fall months. Some farmers preferred to buy at the same time every year, some liked to feed out over the winter months, and 7.8 percent of the farmers merely wanted to try their luck with feeders.

Reasons for Buying from a Particular Marketing Agency

The question often arises as to why feeder farmers purchase their livestock at a particular marketing agency. The data from the farmer sample indicated a number of factors.

Reasons given	Feeder Farmers Per cent
Good previous dealings	35.2
Heard it was a good feeder market	15.7
Happened to see them at sale	7.8
Had knowledge of the feeders	5.9
A neighbor had them to sell	3.9
Likes native cattle best	2.0
Convenient	2.0
On vacation and visited the market	2.0
Gave no reason	25.5

These results indicated that the buyers of feeder livestock in Ohio were fairly well satisfied with the market or markets from which they had made their purchases. Because of good previous dealings, 35.2 percent of the farmers stated they bought feeders at a certain market, and 15.7 percent of the farmers stated they knew it was a good market because they personally were acquainted with the reputation of the sellers.

General Comments

From this farmer sample it can be concluded that the feeder farmers as a group were not entirely satisfied with the transit conditions, methods of handling, losses from sickness, losses from death, crippling, quality of the animals, and the feeding gains made.

Insufficient knowledge of transit conditions, handling, and shrinkage were the factors which caused the buyers the most concern. The majority of the livestock feeders knew nothing about the animals until they saw them at the railroad receiving point, and the records accompanying the shipments were inadequate to explain excess shrink, death losses, handling, etc.

Variation in Feeder Livestock Prices

Prewar and Postwar

The prices[1] of feeder cattle since World War II show greater seasonal variation than the prewar period 1938-1941. In the early prewar period a definite seasonal pattern existed for feeder cattle prices. Prices tended to be highest in April and May, August and December. However, one must state that the prices as a whole were very stable and no wide fluctuations appeared. The variation in feeder cattle prices for choice, good and medium grades ranged from 13.9 percent to 15.1 percent from the lowest month to the highest month.

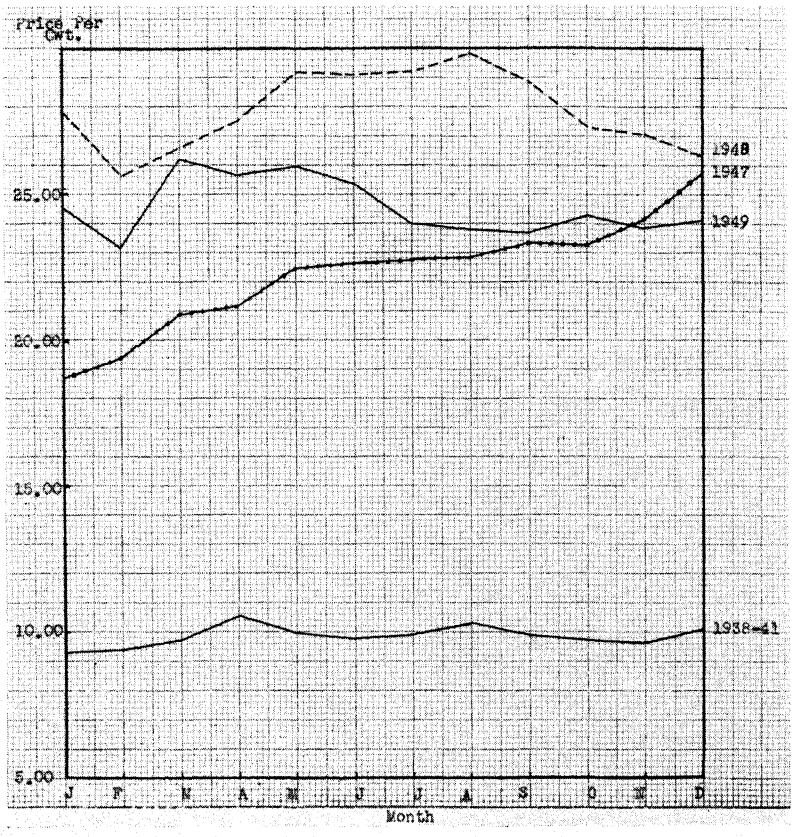

Fig. 3 Average prices of choice feeder steers at Kansas City for 1938-1941 and the years of 1947, 1948 and 1949.

[1]Livestock Market News, U.S.D.A., Production and Marketing Administration, Livestock Branch, Washington, D. C.

Feeder cattle prices in the postwar years, 1947, 1948 and 1949, revealed wide variation from month to month. In all three years, the spring months show a very definite seasonal high for all grades of feeder cattle as shown in Figures 3, 4, and 5. Feeder prices for the first half of 1949 tended to follow almost exactly the 1948 cattle prices, but in the last half of 1949 there was a sharp breaking point and feeder prices followed the corresponding 1947 price pattern.

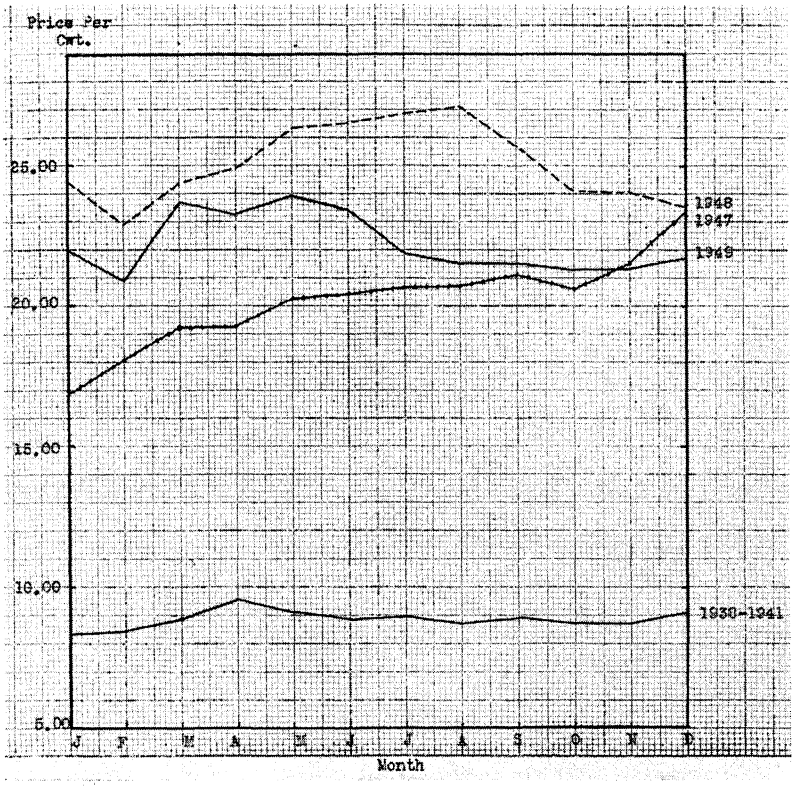

Fig. 4 Average prices of good feeder steers at Kansas City for 1938-1941 and the years of 1947, 1948 and 1949.

In general, there was a definite upward trend in feeder cattle prices until September, 1948. This is illustrated by the fact that the average prices of choice feeder steers in January, 1947 were around $18.50 per hundredweight. In January, 1948 they were approximately $27.75, and after almost reaching a high of $30.00 per hundredweight in August, 1948, they have remained around the $23.50 to $24.00 level for the remainder of 1948 and 1949.

Feeder cattle prices in 1947 showed a range in variation from the lowest to the highest month of 37.3 to 38.2 percent for the three top grades of cattle[1]. In 1948 this variation from the lowest to the highest month ranged from 16.4 to 22.7 percent and in 1949 from 13.1 to 19.0 percent. This indicates that seasonal variation in feeder cattle prices has tended to approach the 1938-1941 prewar period of 13.9 to 15.1 percent, showing less and less seasonal fluctuation in prices.

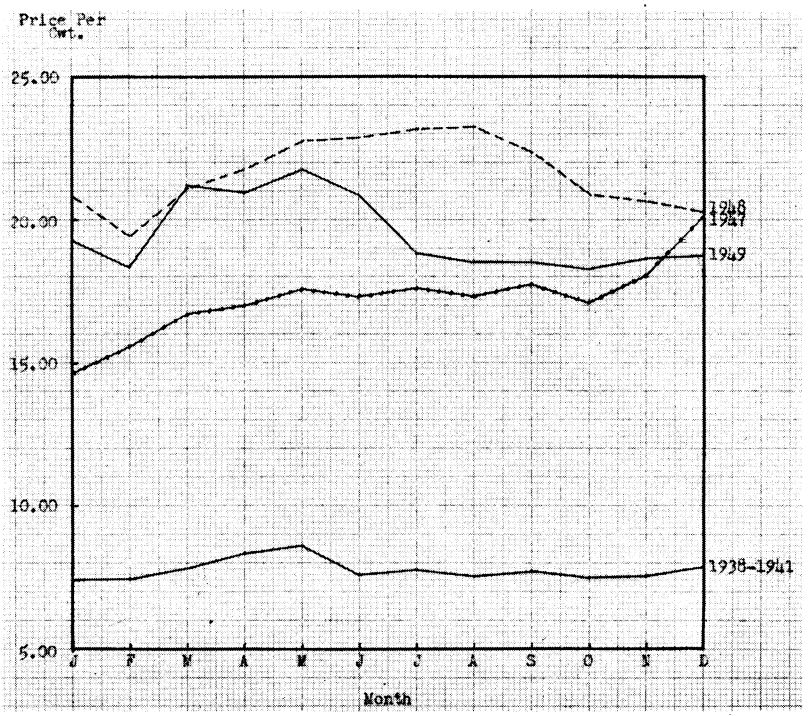

Fig. 5 Average prices of medium feeder steers at Kansas City for 1938-1941 and the years of 1947, 1948 and 1949.

Price Spread Between Grades

The spread between choice, good, and medium feeder steers for the postwar years averaged about $2.00 per hundredweight for 1947 and 1949. In 1948, the spread was higher, ranging from $3.00 to $4.00 per hundredweight.

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[1]For example, in 1947 the highest monthly price for choice cattle was $25.74 and the lowest monthly price, $18.63. The difference between these two prices, divided by the low monthly price of $18.63 gives 38.2 per cent as the variation from the lowest to highest month.

Feeder Margins

The question often arises as to the margin between the cost of feeder cattle and the prices received for the fat animals at a later time. For this analysis two grades of feeder steers (choice and medium) at Kansas City were plotted against the same two grades of fat cattle at Chicago six months later[1].

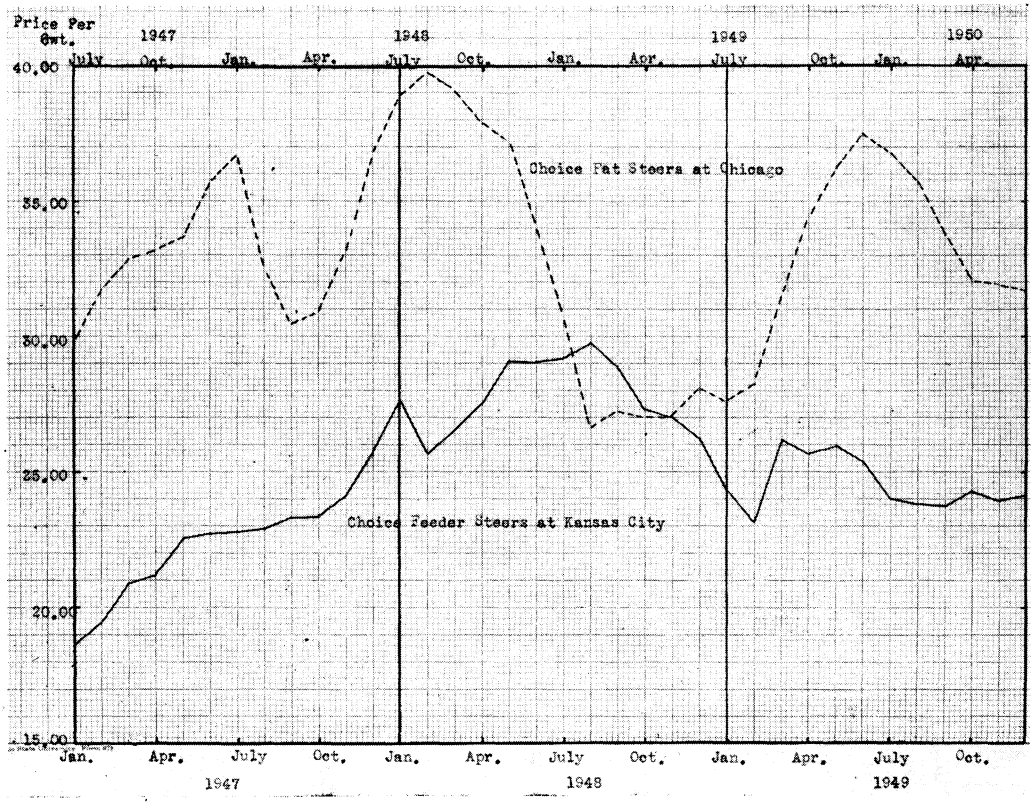

Fig. 6 Average prices of choice feeder steers at Kansas City compared with choice fat steers at Chicago six months later for 1947, 1948 and 1949.

During 1947 and up until July, 1948 feeder farmers had been enjoying a wide margin on all grades of feeder steers. Beginning in August, 1948 and continuing through September, the prices of fat cattle

[1]The authors do not contend that six months feeding will make a choice steer. The period of time was used merely as an average time representing all grades of cattle. For example: the price of feeder cattle in August may have been $25.00, and the comparable grade of fat cattle six months later (February) were only $26.00. This tends to show the price risk feeders must face when feeding steers over a period of six, eight, or ten months.

at Chicago six months later were lower than the original price of the feeder steers at Kansas City, as shown in Figures 6 and 7.

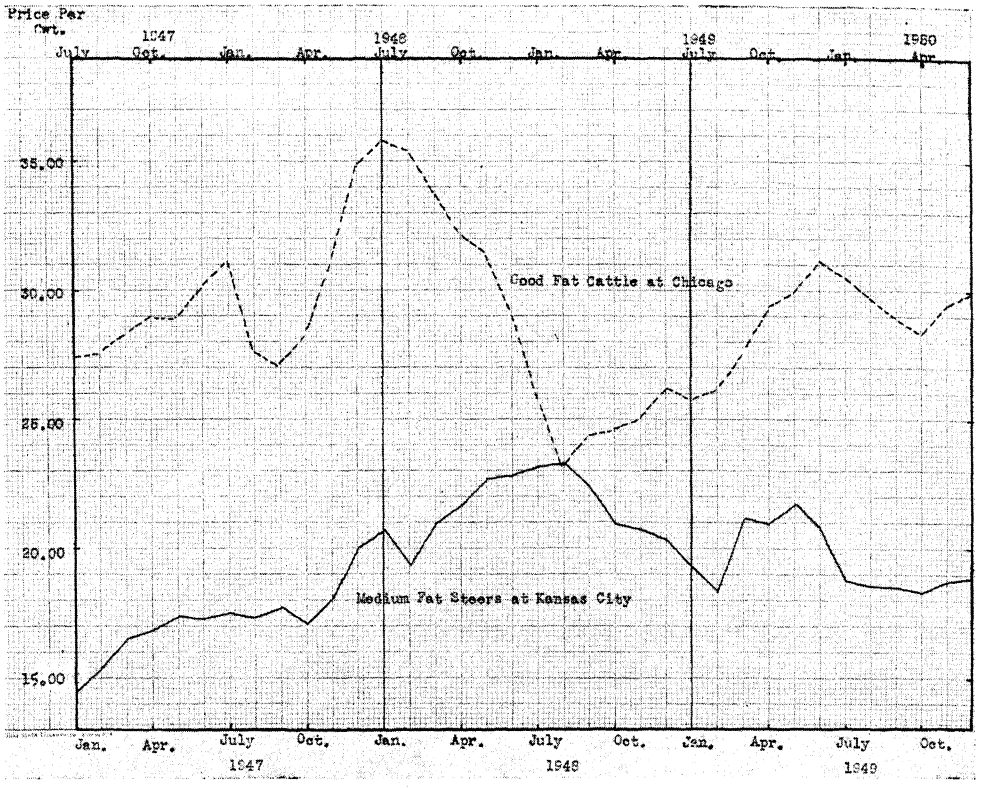

Fig. 7 Average prices of medium feeder steers at Kansas City compared with medium fat steers at Chicago six months later for 1947, 1948 and 1949.

Another aspect that cannot be ignored is where a farmer buys a certain grade of feeder cattle and sells on the fat cattle market six months later at a higher grade. This is a common procedure with a good cattle feeder. The following grades were compared: good feeder against choice fat steers, and medium feeders against good fat steers. These results, as shown in Figures 8 and 9, reveal that farmers enjoyed the highest margin by buying good or medium feeder steers and selling them as choice fat steers.

When cattle are on feed, feeding margins have a tendency to be high if the price trend is rising, and small if the price movement is declining. In 1949, a very definite upward trend in the prices of fat steers plotted six months later showed that feeder farmers enjoyed good margins during the first half of 1949.

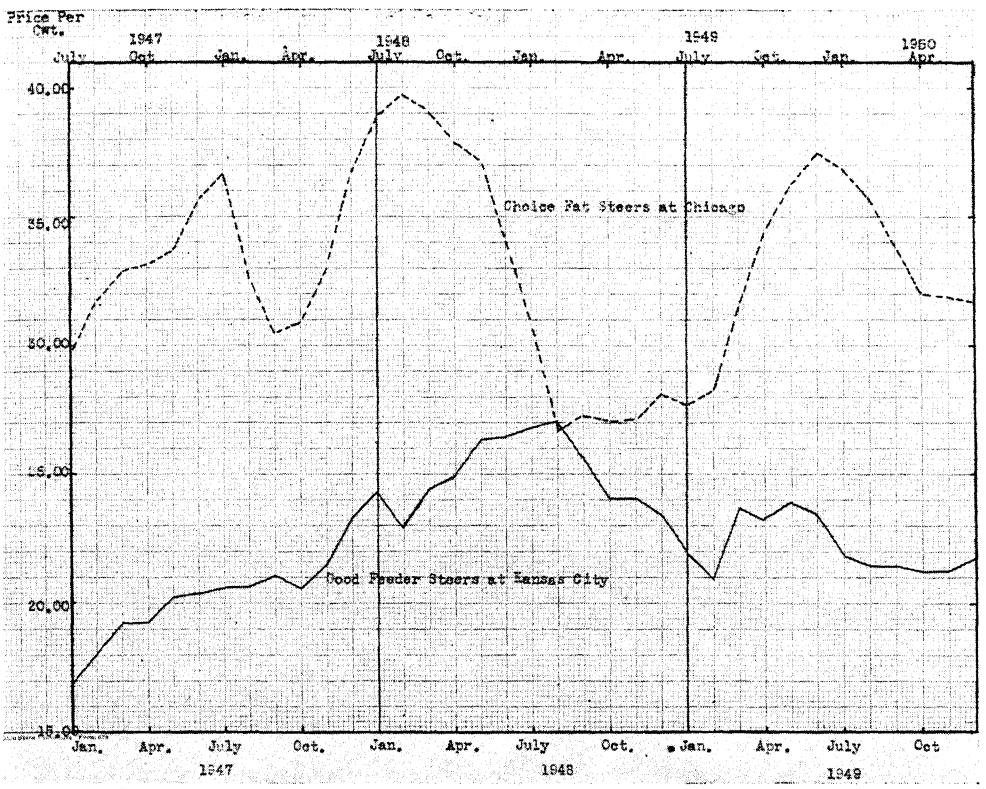

Fig. 8 Average prices of good feeder steers at Kansas City compared with choice fat steers at Chicago six months later for 1947, 1948 and 1949.

During the war years and until August, 1948 profits from cattle feeding have been rather favorable because of the wide margin between feeder prices and fat cattle prices. Since October, 1948 this margin has increased again, but extreme caution must be exercised by feeder farmers if a slump should occur in fat cattle prices. Any decline in the margin means that the profits from livestock feeding must come from greater efficiency in feeding and management.

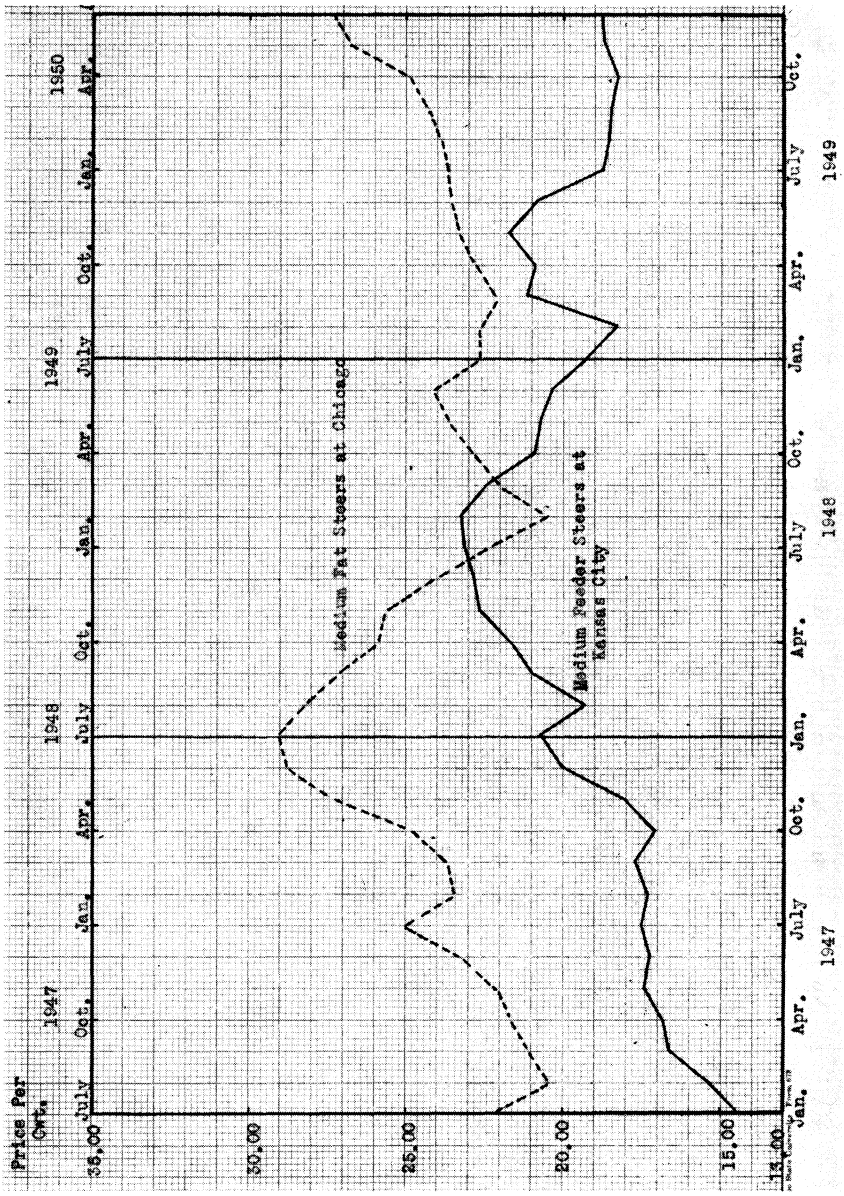

Fig. 9 Average price of medium feeder steers at Kansas City compared with good fat steers at Chicago six minths later for 1947, 1948 and 1949.

Case Studies of Feeder Livestock Shipped Into Ohio

A Case Study of One Double-deck Car of Feeder Lambs from Montana to Ohio[1]

This carload was selected to represent a typical case of all the costs, services, and time involved in the movement of a carload of feeder lambs from Montana to Ohio in September, 1948. This car was one of 15 carloads of feeder lambs consigned to various points in Ohio. Only the costs for one carload will be given, as the other 14 carloads were approximately the same Other transportation information, other than costs, apply to all 15 carloads. This carload of lambs originated in the foothill-mountain area between Helena and Great Falls, Montana. The loading point for these lambs was the ranch itself as there were railroad loading pens adjoining the ranch corrals. During the three day roundup, these lambs had grazed on hay meadows and had free access to water. They arrived at the ranch corrals with a fair amount of fill The handling of the lambs during the roundup was careful and efficiently executed. There were 280 good to choice, whiteface wether lambs of a Targhee-crossbred type loaded into a 36 foot Double Deck railroad car. The average weight at the loading point of the entire shipment of lambs was 74 7 pounds per head. This weight was then prorated to each car according to the number of head it carried. The loading facilities at Helena were in good condition, and the lambs had a 12 hour shrink before they were weighed. The loading process itself was executed very efficiently and the lambs reacted quietly to the loading Railway switching was easy and the movement was normal The lambs did not appear frightened by the noise or movement. The weather was clear with the temperature between 55 and 65 degrees.

This car was given a 36 hour release and was started toward West Chicago, Illinois on the Great Northern Railway. It took 29 hours to travel from Helena, Montana to Williston, North Dakota, the first feed and rest stop. Of this 29 hours, 18 hours were actual operation time, and 11 hours were lost at four stops enroute Railway switching was considerable and roughly done at Great Falls, Fort Benton, and Havre, Montana. The weather was clear the entire route.

[1]This information was obtained through the cooperation of the Montana and Ohio Agricultural Experiment Stations. An observer from the Agricultural Economics Department of Montana rode the freight train from Montana to Columbus, Ohio and observed the handling and feeding of the lambs included in this study.

It was an hour after arrival before unloading began, and this process took two hours since there were 15 carloads in the shipment. The actual amount of rest time off the car amounted to seven hours. Reloading took another three and one-half hours, for all cars and it was nearly three hours before the cars moved out. These lambs spent a little over 16 hours at Williston. They appeared to be only in fair condition, and the handling at Williston was very poorly done.

This car was fed 400 pounds of alfalfa hay which is the minimum amount of feed required by railroad tariff laws, unless otherwise instructed. Feed cost amounted to $11.00 and along with a service charge of $1.66, the total feed and service charge at Williston, North Dakota was $12.66.

It took 28 hours to go from Williston to the second feed and rest stop at Willmar, Minnesota. Seven stops were made between Williston and Willmar and slightly more than seven hours were lost at these stops. Total moving time amounted to nearly 21 hours. There was no railway switching at any of these stops, and the weather was partly cloudy with a temperature of 70 to 75 degrees. Only 30 minutes were lost before unloading began. The lambs had nearly six hours of rest off the car. It took almost two hours both to load and unload at Willmar for the entire shipment. There were three hours lost after the lambs were loaded before the car departed, and the total time spent at Willmar amounted to nearly 12½ hours. The handling of the lambs was good, but their condition was only fair. They were again fed 400 pounds of hay, and along with a service charge of $1.66, the total charges amounted to $11.71. The feeding facilities at Willmar were in good condition. The pens were dry and covered.

The third feed and rest stop was at New Brighton, Minnesota, a few miles north of St. Paul. It took a total of nine hours to travel from Willmar to New Brighton. Only one stop was made enroute with a time loss of nearly two hours. The total operating time between the two points was about seven hours. At St. Paul, the car was switched to the Minnesota Transfer Railway and proceeded on to New Brighton. Railway switching was carried out with an easy movement. Unloading began within four minutes after arrival and all the lambs in the entire shipment were unloaded within an hour. The actual feed and rest time off the car amounted to eight and one-half hours. The handling was excellent, and the feeding facilities were good. Again the lambs were fed 400 pounds of alfalfa hay, and along with a service charge of $1.72, the total costs at New Brighton were $11.72.

After the lambs were reloaded at New Brighton, there was a three hour delay before moving out to St. Paul. This car spent a little more

than 14 hours at New Brighton. Before leaving St. Paul the car was switched to the Chicago and Northwestern Railway. West Chicago, Illinois was considered the place to give the lambs a good rest. It took 28 hours to travel from New Brighton to West Chicago. There were five stops made enroute, and nearly 11½ hours were lost at these stops. The total operating time between the two points was almost 17 hours.

Upon arrival at West Chicago, four and one-half hours were lost before unloading began. The lambs were off the car for feed and rest a total of 52 hours. Unloading and reloading time ranged from one to one and one-half hours for all 15 cars. The lambs were put on blue grass pasture for two days. Feed cost amounted to $28.10 and along with $3.04 for service, the total charges at West Chicago were $31.14. Feeding facilities were good and the handling of the lambs was careful.

The shrinkage to West Chicago for all 15 carloads averaged 10.4 pounds per head or 13.95 percent before the fill, based on the Montana loading weight. After the fill, they were reweighed, making an average gain of 5.3 pounds per head. Thus, the calculated shrink, after the fill, based on the original loading weight amounted on an average to 5.1 pounds per head or 6.9 percent for the entire shipment.

Nine hours were lost at West Chicago after reloading and before departure to the next feeding stop, Calumet City, Illinois. There was considerable railway switching at Proviso, Illinois where the car was switched to the Indiana Harbor Belt Railway. It took nearly seven hours to travel from West Chicago to Calumet City. Two stops were made enroute causing a loss in time of a little over four hours. Total operating time between the two points was almost three hours.

Upon arrival at Calumet City, the lambs began to unload within 11 minutes after arrival, and both unloading and reloading time amounted to less than one hour, respectively, for all 15 cars. Nearly 12 hours were allowed for actual rest time off the car. The condition and handling of the lambs was good.

At Calumet City the lambs were fed only 200 pounds of hay, and with a service charge of 90¢, the total costs amounted to only $5.10. The feeding facilities were covered and the pens were dry.

It took slightly more than 26 hours to travel from Calumet City to the destination, Columbus, Ohio. This car was reported at the edge of Columbus ten hours before they were actually unloaded.

These lambs had a total average shrink of 10.6 pounds per head or 15.9 percent for the entire trip based on the off-car weight at Columbus, Ohio. The lambs appeared to be in good condition, but about 5 percent had water scours enroute and were very gaunt upon arrival. There was plenty of sand bedding on the lower deck, but the top deck had no

bedding. This would have made a very slippery deck, if it had been raining. The lambs were given hay immediately upon arrival at Columbus.

Transportation, Feed, and Service Costs

The transportation rate for feeder lambs is usually figured on a 20,000 pound minimum freight weight at varying rates. The actual weight of these 280 lambs, based on the average loading weight of 74.7 lbs. per head, was 20,916. The carload of lambs consigned to Columbus, Ohio had a total cost of $372.02. The following table reveals the cost items:

Freight	$281.60
Tax on freight	9.07
Disinfectant	6.60
Bedding	2.47
1400 lbs. of hay at various rates	35.20
Feed and water	28.10
Service	8.98
Total	$372.02

This amounted to $1.38 per head or $1.86 per hundredweight (figured on a 20,000 lb. minimum). These figures are representative of the costs for bringing in a carload of lambs that makes five feed and rest stops. These costs will vary in cars with differences in number and with more or less feed stops.

The 15 carloads of lambs were resorted at West Chicago, Illinois and made ready for shipment east to destinations in Ohio.

They all moved into Calumet City, Illinois, and hence were distributed to five railways for shipment to the various destinations. The following table shows the time breakdown from Helena, Montana for the carload to Columbus.

				Mileage
1st Stop (Williston, North Dakota)				
a) Time from origin	29 hours		—	492
b) Time for feed and rest	16 hours	35 minutes		
2nd Stop (Willmar, Minnesota)				
a) Time from 1st stop	28 hours		—	694
b) Time for feed and rest	12 hours	28 minutes		
3rd Stop (New Brighton, Minnesota)				
a) Time from 2nd stop	9 hours	3 minutes	—	91
b) Time for feed and rest	14 hours	7 minutes		
4th Stop (West Chicago, Illinois)				
a) Time from 3rd stop	28 hours		—	442
b) Time for feed and rest	68 hours	27 minutes		

5th stop (Calumet City, Illinois)			
a) Time from 4th stop	6 hours	49 minutes	— 40
b) Time for feed and rest	15 hours	51 minutes	
Destination (Columbus, Ohio)			
a) Time from 5th stop	26 hours	20 minutes	— 300
Total time enroute	254 hours	40 minutes	— 2059
	(10 days—14 hours—40 minutes)		

Operation Breakdown

Actual rest time off car	3 days—13 hours—35 minutes
Net operating time	3 days—20 hours— 2 minutes
Unloading and reloading time	—15 hours—25 minutes
Delays at rest stops	1 day — 2 hours—28 minutes
Delays enroute	1 day —11 hours—10 minutes
Total time enroute	10 days—14 hours—40 minutes

Shrinkage

This carload of lambs consigned to Columbus, Ohio had the following shrink:

Average shrink to West Chicago (before fill 15 carloads)	10.4 lbs. per head	or 13.9%	per cwt.
Average shrink to West Chicago (after fill 15 carloads)	5.1 lbs. per head	or 6.9%	per cwt.
Shrink from West Chicago to Columbus (1 car)	5.5 lbs. per head	or 9.0%	per cwt.
	10.6 lbs. per head	or 15.9%	per cwt.

Analysis of the remaining cars in the shipments revealed wide differences in total shrinkage. These differences can be accounted for by the differences in distance, handling, and length of time enroute. It is believed that time was the most important factor contributing to shrinkage. In comparing this car with other shipments, which arrived at their destination two to three days earlier and with only three to four rest stops, one can see a decided lowering of shrinkage. In addition, it was concluded that any unreasonable delays, such as reconsignment, railway mixup, etc., cause a large increase in shrinkage.

Crippling and Losses

The car of feeder lambs consigned to Columbus, Ohio suffered no losses the entire trip, but the other 14 cars did not fare as well. For the 15 cars in the shipment, there were 21 dead lambs and two cripples at the first feeding stop, Williston, North Dakota. There were dead lambs removed from eight cars. At Willmar, Minnesota, the second rest stop, eight more lambs were dead and two were crippled. Upon arrival at

New Brighton, Minnesota there were no death losses and only two additional cripples. Upon reaching West Chicago, Illinois, one more additional dead lamb was removed.

Thus, in the shipment of 15 cars, 32 lambs died enroute from the origin to West Chicago, Illinois. The high death loss seemed to be caused by the large number of lambs loaded per car. The average number of lambs loaded per car was 278. Four cars had 290 head or more, three cars had 280 to 290 head, and seven cars had 270 head. The heaviest death losses occurred in the cars loaded with 290 head and eight deaths in a car loaded with 300 head; this accounts for over one-half of the total death losses. Total death losses amounted to 0.8 of one percent for the entire shipment.

Death loss was greatest west of West Chicago. No losses occurred in any of the cars from West Chicago east to the various destinations in Ohio. Overall, the figures indicate that if the cars are not too heavily loaded in number, death losses will be kept to a minimum.

Summary—Feeder Sheep and Lamb Movement

From the data illustrated by this typical carload of feeder lambs, and from the analysis of many more carloads, it appears that improvements can be made to facilitate the movement of western lambs into Ohio. Shrinkage is one of the most important items directly and indirectly affected by many factors, such as, length of time enroute, amount of fill before shipping, condition of animals, handling enroute, unnecessary delays, amount and kind of feed, etc. Figure 10 graphically presents the total shrinkage of several carloads of lambs based on the number of days enroute.

It was evident from the manner in which the lambs cleaned up their feed, that 400 pounds of hay (the minimum tariff regulation) was not sufficient for a double-deck load of lambs. In addition, at many stops the hay was not of good enough quality to induce proper feeding.

Length of time enroute was also an important factor affecting shrinkage. There appears to be a railway bottleneck centered around Chicago, and if this could be improved, it would mean arriving at the destinations two to three days earlier. There is too much time lost, too many delays. Also delays enroute at various stops seemed in some cases to be longer than necessary.

Handling of the animals probably did not contribute greatly to shrinkage, but excessive delays before unloading and after reloading tended to increase the total time enroute.

Condition of the animals prior to loading, definitely shows up in the shrink and the mortality rate. More careful handling of the lambs and

proper feeding before shipment will help reduce this loss The practice of keeping the lambs off feed before weighing to obtain a better shrink is a bad practice when the lambs will be on limited feed for six to ten days.

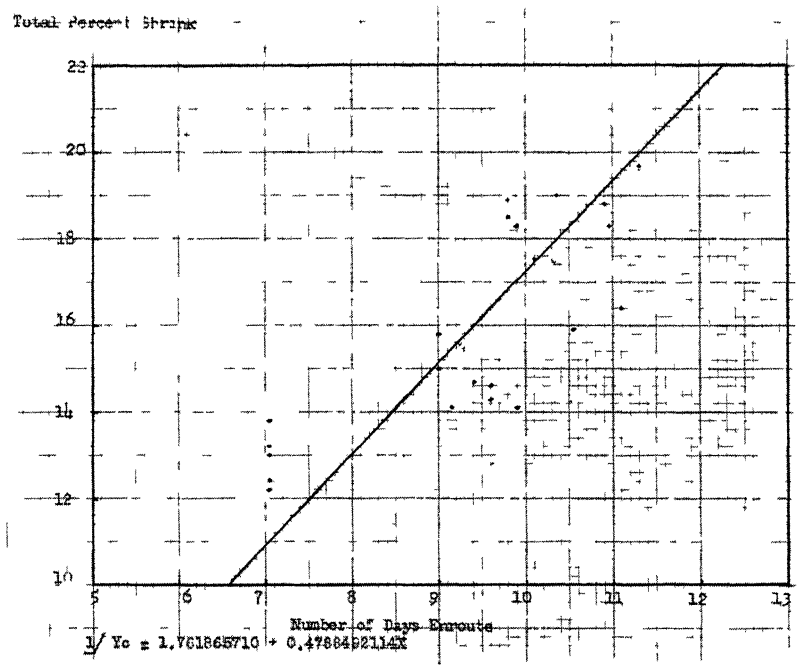

Fig. 10 Total percent shrinkage of several feeder lamb shipments based on days enroute from various western origins into Ohio.

The information furnished by this study indicates these problems need further investigation. Cooperation of all the agencies involved (buyers, sellers, railways, handlers, etc.) is needed to help relieve the situation in order to expedite the movement of feeder lambs into Ohio and other nearby states.

A Case Study of a Single-deck Carload and a Double-deck Carload of Feeder Calves from Montana to Ohio

A study was made of a shipment of feeder calves from a ranch near White Sulphur Springs, Montana to Mt. Vernon, Ohio to acquire more knowledge of the shrinkage and transportation costs on feeder cattle movements. An observer accompanied this shipment. It is reasonable to believe that the conditions of delivery to shipping point weighing, loading, railroad handling and feeding enroute, as well as delivery, weighing at final destination and sorting for grade are typical of direct shipments of feeder cattle from the range states to the Eastern Corn Belt.

The calves were in good condition and handled carefully while being trucked a distance of 30 miles from the ranch to the railway shipping station. Of the 127 head in this shipment, 82 were steers and 45 were heifers. Their total weight was 52,460 pounds, one-half hour after arrival at the shipping point, the steers averaging 426.6 lbs. and the heifers 388.4 lbs. No feed or water was given the calves after weighing or before loading on cars. The cars were loaded by average weights. Fifty calves to a 36 ft. single-deck car and the remaining 77 to a 36 ft. double-deck car. Both cars had sand as bedding. The handling was rough and the calves were nervous throughout the loading and while the train was pulling out.

The two cars of feeder calves left White Sulphur Springs, Montana about six hours after they had been loaded on trucks at the ranch. The first feed stop was at Miles City, Montana. Good weather prevailed over the entire route, and the railroad switching was easy at all places. The total time enroute was 18 hours and 10 minutes of which eight hours and ten minutes were lost making seven stops. At this feeding station unloading was started one hour and twenty minutes after arrival, and the calves were fed 400 lbs. of good quality wild hay per deck with plenty of water. The actual rest time off cars was 15 hours and 10 minutes, after reloading, three hours and twenty minutes were lost before departure. These cars were held for a special stock train and also delayed because of 29 cars of coal moving on a slow freight. Total feed and service costs at Miles City were $33.52.

The shipment was enroute a total of 23 hours to Aberdeen, South Dakota, the second rest stop. There were twelve stops along the way leaving a total operating time of 16 hours and 30 minutes. The calves in the single-deck car were fed 300 lbs. of wild hay, plus one extra bale, and the double-deck car was fed 400 lbs. of hay, plus two extra bales. Total feed charges for the two cars were $17.61. Six hours and five minutes were lost from the time the cattle were reloaded until departure.

The third feeding station was New Brighton, Minnesota, which was reached after 16 hours and 15 minutes enroute. Of this time, five hours and forty minutes were lost at seven stops. Here the calves remained in the cars for five hours and eleven minutes before unloading was started. They were allowed 12 hours and 15 minutes of actual rest time off the cars. They were fed 400 lbs. of hay per car, the minimum tariff requirement. Total costs amounted to $19.20.

Calumet Park, Illinois was the fourth feeding station. It required 27 hours and 25 minutes to reach Calumet Park from New Brighton, Minnesota of which 10 hours and 11 minutes were lost while making 11 stops.

Up to this point the handling had been satisfactory and the railroad switching easy. The total time spent at Calumet Park was 12 hours and 45 minutes. The actual rest time off cars was five hours and thirty minutes, and the time lost after loading before departing, was six hours and ten minutes. The weather was clear, with little wind, and the temperature ranged between 50-60 degrees. There were no dead or crippled animals, although the condition of the livestock was poor and the handling poor. Each car was fed 200 lbs. of very poor quality grass hay. This is the minimum tariff regulation, regardless of number of head. Total feed costs were $8.86. The 77 head in the double-deck car were placed in a pen 20 ft. × 60 ft., which did not provide enough room for all the calves to lie down. The hay was placed in a rack, which permitted about 35 calves to eat at one time, and because all the feed was cleaned up in less than one hour, many of the calves received nothing but water at this stop. There was wet litter on the floor even though the pen was covered.

The 50 head in the single-deck car were placed in a covered pen 30 ft. × 30 ft. with plenty of room to lie down. The hay was placed in a rack that was too high for most of the calves to reach. Only a few calves got water because the trough had a big leak, which probably accounted for the wet litter on the floor. All the calves looked very tired, some were coughing, and none was chewing their cud.

The total hours enroute from Calumet Park to Columbus, Ohio was 15 hours and 20 minutes, of which four hours and fifty minutes were lost in making four stops. At Columbus, the calves remained in the cars three hours and thirty minutes before unloading, and were allowed seven hours and fifteen minutes actual rest time off cars.

Feed and service costs at Columbus amounted to $7.05 per car.

The calves were enroute eight hours and forty-five minutes from Columbus to Mt. Vernon and 14 hours were lost before unloading. When finally unloaded, the 127 feeder calves were in fair condition, but four calves had shipping fever and were treated with sulfa pills by a veterinarian. Some had runny noses and evidently had colds. Two of the calves died two days after arrival at Mt. Vernon.

Weights at Mt. Vernon were taken on an empty basis and it should be noted that the last good fill was at New Brighton, Minnesota almost 78 hours before. The table below summarizes the shrinkage to Mt. Vernon, Ohio:

	Total shrink	Shrink per head	Percent shrink
82 steers	4,425 lbs.	54.0 lbs.	12.7 per cent
45 heifers	1,965 lbs.	43.6 lbs.	11.2 per cent
127 head	6,390 lbs.	50.3 lbs.	12.2 per cent

The calves were sorted into the following groups at Mt. Vernon and weighed:

Steers	No. per head	Average weight	
Choice, heavy	6	476 lbs.	2,860 lbs.
Choice, medium	32	403 lbs.	12,910 lbs.
Choice, light	15	337 lbs.	5,055 lbs.
Good, light	11	373 lbs.	4,110 lbs.
Medium, light	16	308 lbs.	4,940 lbs.
Sick calves	2	370 lbs.	740 lbs.
	82	———	30,615 lbs.
Heifers			
Heavy	22	373 lbs.	8,210 lbs.
Medium	12	322 lbs.	3,870 lbs.
Light	11	309 lbs.	3,400 lbs.
	45	———	15,480 lbs.

Transportation, Feed and Service Costs

The data concerned with the cost items of the two cars of feeder calves to Mt. Vernon are:

	Single Deck	Double Deck
Weight on which freight was calculated	18,310#	27,380#
Number of head	50	77
Freight rate, White Sulphur Springs, Montana to Chicago	1.11	.96
Freight rate, Chicago to Mt. Vernon	.51	.43
Total freight	$298.28	$383.05
Feed and service	39.49	53.33
Tax on freight	9.15	11.76
Total cost	$346.92	$448.14
Total cost per hundredweight	1.89	1.64

The summary of the time enroute from White Sulphur Springs, Montana to Mt. Vernon, Ohio was as follows:

Total time from ranch to departure from White Sulphur Springs	5 hrs.	50 min.
Number of feeding stations	5	
Total stops	41	
Time lost before unloading	24 hrs.	57 min.
Unloading time	1 hr.	14 min.
Actual rest time off cars (5 stops)	53 hrs.	55 min.
Reloading time	2 hrs.	0 min.
Time lost before departure	18 hrs.	35 min.
Time lost at stops	35 hrs.	21 min.
Total operating time	73 hrs.	34 min.
Total time enroute (1,822 miles)	215 hrs.	20 min.
	(8 days—23 hrs.—20 min.)	

The total cost of freight, feed, service and tax for the single deck car was $1.89 per hundredweight and for the double deck, $1.64 over a distance of 1,822 miles.

Summary—Feeder Cattle and Calves Movement

Some data obtained on 19 shipments of feeder cattle from Texas by the Eastern Order Buying Company to the Producers' Livestock Cooperative Association at Findlay, Ohio, approximately 1,535 miles, showed an average total cost per hundredweight of $1.06. These shipments had three feed and rest stops and were enroute approximately eight days. One shipment showed a shrinkage of 10.8 percent. Corresponding shipments with two feeding stops averaged $1.02 per hundredweight and the shrinkage for one shipment amounted to 14.7 percent.

Two shipments of feeder calves from Oklahoma City to Findlay, Ohio averaged 12.6 percent total shrink and $1.08 total cost per hundredweight for a distance of approximately 1,030 miles. The calves were unloaded at two feeding stations and were actually enroute almost six days.

A study of the limited data available on these and other shipments of feeder cattle show a wide variation in the amount of shrinkage, time enroute, freight, feed and service costs. Much more information and study is required to determine the amount various factors influence shrinkage in transit. Most certainly the time enroute, handling, feeding and service under present practices leaves much to be desired. The time enroute, the time lost at stops (other than feeding stations), and the time lost before departure could be shortened considerably. Elimination of much of the lost time could easily mean two less stops for feed and rest, and would no doubt be a significant factor in reducing shrinkage, feed and service costs, as well as reducing the incidence of shipping fever. This would assure the arrival of cattle in a much more satisfactory condition by reducing the time enroute by three days in the case of Montana cattle.

Recommendations and Conclusions

This bulletin deals primarily with trends in the feeder livestock business in Ohio. The main emphasis is placed upon the problems that confront feeder farmers in their attempt to purchase feeder livestock from the western rangelands. Data were obtained from the Ohio Bureau of Animal Industry, from an area survey of Ohio feeder farmers, and from actual case studies of feeder livestock from Montana.

The volume of feeder livestock shipped into Ohio varies from year to year, depending upon the amount of feed available, and the prospects of a profitable margin. There is a definite seasonal pattern followed with the greatest portion of the feeder livestock being moved into Ohio in the late summer and fall months with the peak reached in the months of September and October.

Ohio farmers showed no distinct preference for a particular section of the country in the purchase of their feeder livestock. The Northwestern or Western and the Southwestern ranges were almost equally represented. Terminal markets continue to play the leading role in shipments of feeder cattle and calves into Ohio, while the majority of the feeder sheep and lambs are purchased direct. Kansas City, Missouri has been the leader in terminal market shipments of cattle to Ohio, accounting for at least one-fifth of the feeder cattle every year. The majority of the feeder sheep and lambs purchased direct come from the Western and Southwestern sections of the United States and include Texas, New Mexico, Nebraska, and Oklahoma.

The prices of feeder cattle since World War II show greater seasonal variation than the pre-war years, 1938-1941. Analysis of the variation from the lowest to highest month reveals extremely wide variation in 1947, much lower variation in 1948, and in 1949, feeder prices have tended to approach the stable prices of pre-war years.

Since the war, profits from livestock feeding have been rather favorable because of the wide margin between the price of the feeder livestock at time of purchase and the price of slaughter livestock at the time of marketing. In conclusion one can say that the grade of livestock to feed, and the time of marketing are the most important decisions for a farmer to make. The amount of his profit will largely depend upon how well these decisions work out at the time of marketing.

Ohio farmers have developed certain buying habits in their purchase of feeder livestock, namely, to purchase livestock in quantities approaching carlot size; to purchase feeder cattle ranging in weight from 400 to 800 pounds; and to purchase steers over any other sex or class of cattle.

There are definite feeding areas in Ohio for feeder livestock. The area in the Northwestern section of the state centering around Wood County received 29.2 percent of the total feeder cattle during 1948 and 1949. The heaviest centers of distribution of feeder sheep in the past two years were in markets located in Franklin, Marion, Fulton, Hardin, and Clark counties. These five centers, each located in a different area, brought in 46 percent of the feeder lambs in the state.

Examination of the case studies reveal many factors which affect the condition and movement of feeder livestock, namely, shrinkage, length of time enroute, amount of fill, condition of animals, handling enroute, cost, unnecessary delays, amount and kind of feed, etc.

The following recommendations are presented:

1) Change the method of buying animals at origin. A plan should be worked out to arrive at a good basis of shrink that would be carried out to the satisfaction of both the producer and the purchaser.

2) The railroads should plan to keep feeders off the cars until 30 to 45 minutes before the train pulls out.

3) The railroads should make a regular feed charge for 400 pounds of hay, and for amounts over 400 pounds at regular cost. Animals should be given all they will clean up at the rest stations.

4) During the feeder run, the railroad officials should check closer on feeding stations. No small stock should be placed in pens where the animals cannot reach the feed. (That is plain carelessness.)

5) The railroads should plan to speed up the cars of feeder livestock, especially around Chicago. (Feeder livestock should be given a faster run around this city.)

6) The delivery by railroads to some points in Ohio from Chicago is satisfactory. For other points it is unsatisfactory, even involving an extra feeding charge to destination, and more delay.

7) The purchasers of feeder livestock shipped into Ohio, Indiana, and Michigan, as well as Illinois, might give consideration to developing a feeder station 50 miles west or northwest of Chicago. This point could be used as a feed and rest station and also for resorting, when desired. If the railroads can't arrange for fast and quick transportation around Chicago to the Eastern Corn Belt, then semi-trailers might be used for quick delivery from such a station to points as far east as Ohio. Trucks could move feeder livestock much faster than the railroads now are, thus assuring more satisfactory service. The movement from Western states to Chicago is reasonably satisfactory, while the movement around Chicago and beyond needs much improvement.

The information furnished by this study indicates that these problems need further investigation. Cooperation of all the agencies involved (buyers, sellers, railroads, handlers, etc.) is needed to expedite the movement of feeder livestock into Ohio and nearby states.